

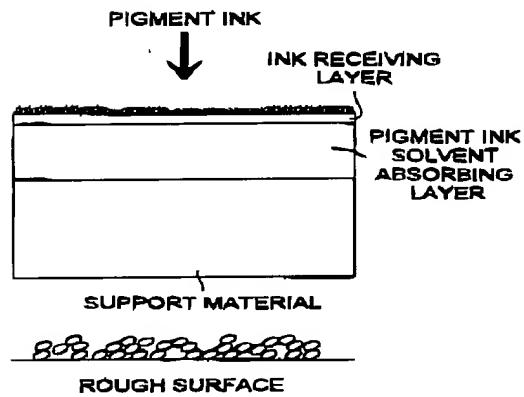
PATENT  
Attorney Docket No.: 56232.00003

REMARKS

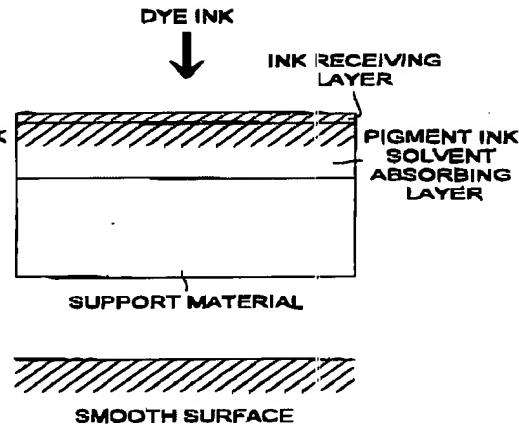
Please reconsider this application in view of the above amendments and the following remarks.

- Claims 2-6 and 8-37 are pending.
- Claims 2-6, 17-23, and 31-37 are rejected.
- Claims 8-16 and 24-30 are withdrawn from consideration.

**FIG. A**



**FIG. B**



In an inkjet recording apparatus, when a recording head jets pigment ink onto a recording medium so as to form a pigment ink image, the jetted pigment remains as particles on the surface of the recording medium as shown in Fig. A. In other words, the surface of the ink receiving layer becomes a rough surface containing concaves and convexes. Since such a rough surface reflects light irregularly, the reflected light is scattered such that the glossiness of the image becomes lower, see page 2 lines 20-22.

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In order to improve the glossiness of the pigment ink image, as a result of tests and experiments, the inventor contrived to apply heat and pressure with respective claimed ranges of a heating temperature and a pressing force.

That is, in the present invention, as recited in claim 33, a heating and pressing device heats and presses a recording medium with a pressing force of  $9.8 \times 10^4$  to  $4.9 \times 10^6$  Pa and a temperature controller controls a heating temperature within a range of  $T_0 \pm \Delta T$  °C, where  $T_0$  is 50 to 150 °C and  $\Delta T$  is not larger than 10 °C.

By the application of heat and pressure with the claimed ranges, the ink receiving surface is made transparent and the surface roughness is improved, because the reflectance of the light is increased, see page 119 lines 4-10.

The Examiner rejects claim 33 under 35 USC 103(a) as being unpatentable over Takekoshi in view of Ahta et al and Iwao.

As the Examiner admits, Takekoshi fails to teach a pigment ink and a pressing force, see page 9 in the Office Action.

When a recording head jets dye ink onto a recording medium so as to form a dye ink image, no particle remains on the surface of the recording medium as shown in Fig. B. Accordingly, there is no need to apply a pressure onto the surface of the recording medium in order to improve the surface roughness.

Accordingly, it would not have been obvious for an ordinarily skilled person to conceive to apply a pressing force of  $9.8 \times 10^4$  to  $4.9 \times 10^6$  Pa onto a recording medium.

Further, when the recording medium is heated with a very high heating temperature while applying the pressing force of the present invention, there is a problem that the thermoplastic resin on the image receiving layer adheres and transfers to the heating surface of the heating roller. As a result, the image quality will be lowered. In order to avoid such a problem, in the present invention, the upper limit of the claimed range is determined as 150 °C.

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However, Takekoshi teaches to set the heating temperature around 170 °C for a paper base or around 160 °C for a film base higher than the upper limit 150 °C of the present invention, see column 10 lines 35-43.

Accordingly, the combination of the temperature range of 50 to 150 °C and the pressing force of  $9.8 \times 10^4$  to  $4.9 \times 10^6$  Pa would not have been obvious from the teaching of Takekoshi.

As the Examiner stated, Ohta et al seem to teach pigment ink as disclosed in Abstract.

Although Ohta et al teach the advantage of the pigment ink image that images obtained by the pigment ink is excellent in water resistance and light fastness, see column 2 lines 40-44, Ohta et al do not teach nor suggest a problem of the pigment ink image.

Accordingly, there is no motivation to solve the problem of the pigment ink image in Ohta et al.

As the Examiner stated, Iwao seems to teach a pressing force.

However, Iwao merely teaches about a platen roller 70 and a transfer roller 50 between which ink image is transferred from a belt 40 to a sheet 60 as shown in Fig. 1, and teach nothing about a heating and pressing device which heats and presses a recording medium recorded by the recording head in order to make the image receiving layer transparent.

Since the platen roller and a transfer roller have nothing to do with the heating and pressing device to make the image receiving layer transparent, an ordinarily skilled person would not refer to the reference of Iwao.

Further, although the Examiner asserted that Iwao teaches a pressing force is 4.4 kg which is  $4.3 \times 10^5$  Pa (Column 11 line 10), Iwao merely teaches that a pressure is

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approximately 4.4 Kg and does not teach such that a pressure is approximately  $4.3 \times 10^5$  Pa.

As discussed above, in Takekoshi and Ohta et al, there is no motivation to solve the problem of the pigment ink image in the heating and pressing device, and in Iwao, there is no teaching about the heating and pressing device to make the image receiving layer transparent. Accordingly, there is no motivation to combine the teachings of Takekoshi, Ohta et al and Iwao.

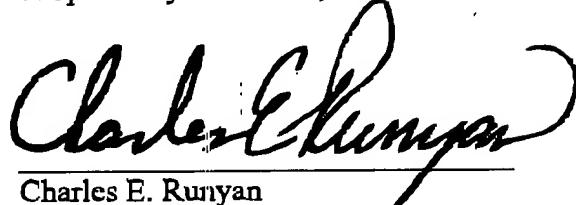
Even if taking the teachings of Takekoshi, Ohta et al and Iwao in combination, since none of them teaches a heating and pressing device to apply a pressing force of  $0.8 \times 10^4$  to  $4.9 \times 10^6$  Pa onto a recording sheet bearing a pigment ink image, the present invention recited in claim 33 would not have been obvious over them.

Furthermore, Even if taking the teachings of Takekoshi, Ohta et al and Iwao in combination, since none of them teaches the effect to increase the glossiness of the pigment ink image, the present invention recited in claim 33 would not have been obvious over them.

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Since all claims are in a condition for allowance, please issue a Notice of Allowability so stating. If I can be of any help, please contact me.

Respectfully submitted,



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